

§ 86.1

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86.535–90 Dynamometer procedure.
 86.536–78 Engine starting and restarting.
 86.537–90 Dynamometer test runs.
 86.540–90 Exhaust sample analysis.
 86.542–90 Records required.
 86.544–90 Calculations; exhaust emissions.

AUTHORITY: 42 U.S.C. 7401–7671q.

EDITORIAL NOTE: Nomenclature changes to part 86 appear at 60 FR 34377, June 30, 1995 and 69 FR 18803, Apr. 9, 2004.

§ 86.1 Reference materials.

(a) The documents in paragraph (b) of this section have been incorporated by reference. The incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be inspected at U.S. EPA, OAR, 401 M St., SW., Washington, DC 20460, or at the National Archives and Records Administration (NARA). For information on the availability of this

material at NARA, call 202–741–6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(b) The following paragraphs and tables set forth the material that has been incorporated by reference in this part.

(1) *ASTM material.* The following table sets forth material from the American Society for Testing and Materials that has been incorporated by reference. The first column lists the number and name of the material. The second column lists the section(s) of this part, other than this section, in which the matter is referenced. Copies of these materials may be obtained from American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959.

Document number and name	40 CFR part 86 reference
ASTM E29–67 (Reapproved 1980), Standard Recommended Practice for Indicating Which Places of Figures Are To Be Considered Significant in Specified Limiting Values.	86.1105–87.
ASTM E29–90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications.	86.609–84; 86.609–96; 86.609–97; 86.609–98; 86.1009–84; 86.1009–96; 86.1442; 86.1708–99; 86.1709–99; 86.1710–99; 86.1728–99.
ASTM D5186–91, Standard Test Method for Determination of Aromatic Content of Diesel Fuels by Supercritical Fluid Chromatography.	86.113–07; 86.1313–91; 86.1313–94; 86.1313–98; 1313–2007.
ASTM D2163–91, Standard Test Method for Analysis of Liquefied Petroleum (LP) Gases and Propane Concentrates by Gas Chromatography.	86.113–94; 86.1213–94; 86.1313–94.
ASTM D1945–91, Standard Test Method for Analysis of Natural Gas By Gas Chromatography.	86.113–94; 86.513–94; 86.1213–94; 86.1313–94.
ASTM E29–93a, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications.	86.098–15; 86.004–15; 86.007–11; 86.007–15; 86.1803–01; 86.1823–01; 86.1824–01; 86.1825–01; 86.1837–01.
ASTM D2986–95a, (Reapproved 1999) Standard Practice for Evaluation of Air Assay Media by the Monodisperse DOP (Diocetyl Phthalate) Smoke Test.	86.1310–2007.
ASTM F1471–93, Standard Test Method for Air Cleaning Performance of a High-Efficiency Particulate Air-Filter System.	86.1310–2007.
ASTM D 975–04c Standard Specification for Diesel Fuel Oils	86.1910, 86.213–11.

(2) *SAE material.* The following table sets forth material from the Society of Automotive Engineers that has been incorporated by reference. The first column lists the number and name of the material. The second column lists the section(s) of this part, other than § 86.1, in which the matter is referenced. The second column is presented for information only and may not be all inclusive. Copies of these materials may be obtained from Society of Automotive Engineers International, 400 Commonwealth Dr., Warrendale, PA, 15096–0001.

Document No. and name	40 CFR part 86 reference
SAE J1349, June 1990, Engine Power Test Code—Spark Ignition and Compression Ignition.	86.094–8; 86.096–8
SAE J1850 July 1995, Class B Data Communication Network Interface.	86.099–17; 86.1806–01
SAE J1877, July 1994 Recommended Practice for Bar-Coded Vehicle Identification Number Label.	86.095–35; 86.1806–01
SAE J1892 October 1993, Recommended Practice for Bar-Coded Vehicle Emission Configuration Label.	86.095–35; 86.1806–01

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Document No. and name	40 CFR part 86 reference	Document No. and name	40 CFR part 86 reference
SAE J1939-11, December 1994, Physical Layer-250K bits/s, Shielded Twisted Pair.	86.005-17; 86.1806-05	SAE J1939-71, Vehicle Application Layer—J1939-71 (through 1999). (Revised, August 2002).	86.005-17; 86.1806-04; 86.1806-05
SAE J1939-13, July 1999, Off-Board Diagnostic Connector.	86.005-17; 86.1806-05	SAE J1939-73, Application Layer-Diagnostics. (Revised, June 2001).	86.005-17; 86.1806-04; 86.1806-05
SAE J1939-21, July 1994, Data Link Layer.	86.005-17; 86.1806-05	SAE J1939-81, Recommended Practice for Serial Control and Communications Vehicle Network Part 81—Network Management. (July 1997).	86.005-17; 86.1806-04;—86.1806-05
SAE J1939-31, December 1997, Network Layer.	86.005-17; 86.1806-05	SAE J1962, Diagnostic Connector—Equivalent to ISO/DIS 15031-3:December 14, 2001. (Revised, April 2002).	86.005-17;86.1806-04; 86.1806-05
SAE J1939-71, May 1996, Vehicle Application Layer.	86.005-17; 86.1806-05	SAE J1978, OBD II Scan Tool—Equivalent to ISO/DIS 15031-4; December 14, 2001. (Revised, April 2002).	86.005-17;86.1806-04; 86.1806-05
SAE J1939-73, February 1996, Application Layer-Diagnostics.	86.005-17; 86.1806-05	SAE J1979, E/E Diagnostic Test Modes—Equivalent to ISO/DIS 15031-5: April 30, 2002. (Revised, April 2002).	86.099-17;86.005-17; 86.1806-01; 86.1806-04; 86.1806-05
SAE J1939-81, July 1997, Recommended Practice for Serial Control and Communications Vehicle Network—Part 81—Network Management.	86.005-17; 86.1806-05	SAE J2012, Diagnostic Trouble Code Definitions—Equivalent to ISO/DIS 15031-6: April 30, 2002. (Revised, April 2002.).	86.005-17; 86.1806-04; 86.1806-05
SAE J1962 January 1995, Diagnostic Connector.	86.099-17; 86.1806-01	SAE Recommended Practice J1930 (Revised, May, 1998), Electrical/ Electronic Systems Diagnostic Terms, Definitions, Abbreviations, and Acronyms.	86.096-38; 86.004-38; 86.007-38; 86.1808-01; 86.1808-07.
SAE J1979 July 1996, E/E Diagnostic Test Modes.	86.099-17; 86.1806-01	SAE Recommended Practice J1979 (Revised, September, 1997), E/E Diagnostic Test Modes.	86.096-38; 86.004-38; 86.007-38; 86.1808-01; 86.1808-07.
SAE J2012 July 1996, Recommended Practice for Diagnostic Trouble Code Definitions.	86.099-17; 86.1806-01	SAE Recommended Practice J2284-3 (May, 2001), High Speed CAN (HSC) for Vehicle Applications at 500 KBPS.	86.096-38; 86.004-38; 86.007-38; 86.1808-01; 86.1808-07.
SAE Recommended Practice J1151, December 1991, Methane Measurement Using Gas Chromatography, 1994 SAE Handbook—SAE International Cooperative Engineering Program, Volume 1: Materials, Fuels, Emissions, and Noise; Section 13 and page 170 (13.170).	86.111-94; 86.1311-94.	SAE Recommended Practice J2534 (February, 2002), Recommended Practice for Pass-Thru Vehicle Programming.	86.096-38; 86.004-38; 86.007-38; 86.1808-01; 86.1808-07.
SAE Recommended Practice J1937, November 1989, Engine Testing with Low Temperature Charge Air Cooler Systems in a Dynamometer Test Cell.	86.1330-84; 86.1330-90.		
SAE J1850, Class B Data Communication Network Interface. (Revised, May 2001).	86.005-17; 86.1806-04; 86.1806-05		
SAE J1930, Electrical/Electronic Systems Diagnostic Terms, Definitions, Abbreviations, and Acronyms—Equivalent to ISO/TR 15031-2: April 30, 2002. (Revised, April 2002).	86.005-17; 86.1806-04; 86.1806-05		
SAE J1939-11, Physical Layer—250K bits/s, Shielded Twisted Pair. (Revised, October 1999).	86.005-17; 86.1806-04; 86.1806-05		
SAE J1939-13, Off-Board Diagnostic Connector. (July 1999).	86.005-17; 86.1806-04; 86.1806-05		
SAE J1939-21, Data Link Layer. (Revised, April 2001).	86.005-17; 86.1806-04; 86.1806-05		
SAE J1939-31, Network Layer. (Revised, December 1997).	86.005-17; 86.1806-04; 86.1806-05		

(3) *ANSI material.* The following table sets forth material from the American National Standards Institute that has been incorporated by reference. The first column lists the number and name of the material. The second column lists the section(s) of this part, other than § 86.1, in which the matter is referenced. The second column is presented for information only and may not be all inclusive. Copies of these materials may be obtained from the American National Standards Institute, 11 West 42nd Street, 13th Floor, New York, NY 10036.

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Document number and name	40 CFR part 86 reference
ANSI/AGA NGV1–1994, Standard for Compressed Natural Gas Vehicle (NGV) Fueling Connection Devices.	86.001–9; 86.004–9; 86.098–8; 86.099–8; 86.099–9; 86.1810–01

(4) *California regulatory requirements.* The following table sets forth California regulatory requirements that have been incorporated by reference. The first column lists the name and date of the material. The second column lists the sections of the part, other than §86.1, in which the matter is referenced. The second column is presented for information only and may not be all-inclusive. Copies of these materials may be obtained from U.S. EPA, Office of Air and Radiation, 1200 Pennsylvania Ave., NW., Washington, DC 20460.

Document No. and name	40 CFR part 86 reference
California Regulatory Requirements Applicable to the “LEV II” Program, including: 1. California Exhaust Emission Standards and Test Procedures for 2003 and Subsequent Model Zero-Emission Vehicles and 2001 and Subsequent Model Hybrid Electric Vehicles, in the Passenger Car, Light-duty Truck and Medium-duty Vehicle Classes. August 5, 1999.	86.1806–01; 86.1811–04; 86.1844–01.

Document No. and name	40 CFR part 86 reference
ISO 9141–2, February 1, 1994, Road vehicles—Diagnostic systems—Part 2: CARB requirements for interchange of digital information.	86.099–17; 86.1806–01; 86.1806–04; 86.005–17; 86.1806–05
ISO 14230–4:2000(E) “Road vehicles—Diagnostic systems—KWP 2000 requirements for Emission-related systems”, (June 1, 2000).	86.099–17; 86.1806–01; 86.1806–04; 86.005–17; 86.1806–05
ISO 15765–4.3:2001, December 14, 2001, Road Vehicles—Diagnostics on Controller Area Network (CAN)—Part 4: Requirements for emission-related systems.	86.005–17; 86.1806–04; 86.1806–05

(6) *NIST material.* The following table lists material from the National Institute of Standards and Technology that we have incorporated by reference. The first column lists the number and name of the material. The second column lists the sections of this part where we reference it. Anyone may purchase copies of these materials from the Government Printing Office, Washington, DC

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Document No. and name	40 CFR part 86 reference
2. California Non-Methane Organic Gas Test Procedures. August 5, 1999.	86.1803–01; 86.1810–01; 86.1811–04.
California Regulatory Requirements Applicable to the National Low Emission Vehicle Program, October 1996.	86.113–004; 86.612–97; 86.1012–97; 86.1702–99; 86.1708–99; 86.1709–99; 86.1717–99; 86.1735–99; 86.1771–99; 86.1775–99; 86.1776–99; 86.1777–99; Appendix XVI; Appendix XVII.

(5) *ISO material.* The following table sets forth material from the International Organization of Standardization that has been incorporated by reference. The first column lists the number and name of the material. The second column lists the section(s) of this part, other than §86.1, in which the matter is referenced. The second column is presented for information only and may not be all inclusive. Copies of these materials may be obtained from the International Organization for Standardization, Case Postale 56, CH-1211 Geneva 20, Switzerland.

20402 or download them from the Internet at <http://www.nist.gov/>.

Document No. and name	Part 86 reference
NIST Special Publication 811, Guide for the Use of the International System of Units (SI), 1995 Edition.	86.1901

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[58 FR 16019, Mar. 24, 1993, as amended at 58 FR 58417, Nov. 1, 1993; 59 FR 48491, 59 FR 48491, Sept. 21, 1994; 59 FR 50073, Sept. 30, 1994; 60 FR 43887, Aug. 23, 1995; 61 FR 54877, Oct. 22, 1996; 62 FR 31232, June 6, 1997; 62 FR 47119, Sept. 5, 1997; 62 FR 54715, Oct. 21, 1997; 63 FR 965, Jan. 7, 1998; 63 FR 70694, Dec. 22, 1998; 64 FR 23920, May 4, 1999; 65 FR 6848, Feb. 10, 2000; 65 FR 59944, Oct. 6, 2000; 66 FR 5159, Jan. 18, 2001; 68 FR 35798, June 17, 2003; 68 FR 35798, June 17, 2003; 70 FR 34619, June 14, 2005; 71 FR 77919, Dec. 27, 2006]

Subpart A—General Provisions for Emission Regulations for 1977 and Later Model Year New Light-Duty Vehicles, Light-Duty Trucks and Heavy-Duty Engines, and for 1985 and Later Model Year New Gasoline Fueled, Natural Gas-Fueled, Liquefied Petroleum Gas-Fueled and Methanol-Fueled Heavy-Duty Vehicles

SOURCE: 42 FR 32907, June 28, 1977, unless otherwise noted.

§ 86.000–2 Definitions.

The definitions of § 86.098–2 continue to apply to 1998 and later model year vehicles. The definitions listed in this section apply beginning with the 2000 model year.

AC1 means a test procedure as described in § 86.162–00 which simulates testing with air conditioning operating in an environmental test cell by adding the air conditioning compressor load to the normal dynamometer forces.

AC2 means a test procedure as described in § 86.162–00 which simulates testing with air conditioning operating in an environmental test cell by adding a heat load to the passenger compartment.

Alternative fuels means any fuel other than gasoline and diesel fuels, such as methanol, ethanol, and gaseous fuels.

866 Cycle means the test cycle that consists of the last 866 seconds (seconds 505 to 1372) of the EPA Urban Dynamometer Driving Schedule, described in § 86.115–00 and listed in appendix I, paragraph (a), of this part.

Environmental test cell means a test cell capable of wind-speed, solar thermal load, ambient temperature, and humidity control or simulation which

meets the requirements of § 86.161–00 for running emission tests with the air conditioning operating.

Federal Test Procedure, or FTP means the test procedure as described in § 86.130–00 (a) through (d) and (f) which is designed to measure urban driving tail pipe exhaust emissions and evaporative emissions over the Urban Dynamometer Driving Schedule as described in appendix I to this part.

505 Cycle means the test cycle that consists of the first 505 seconds (seconds 1 to 505) of the EPA Urban Dynamometer Driving Schedule, described in § 86.115–00 and listed in appendix I, paragraph (a), of this part.

SC03 means the test cycle, described in § 86.160–00 and listed in appendix I, paragraph (h), of this part, which is designed to represent driving immediately following startup.

Supplemental FTP, or SFTP means the additional test procedures designed to measure emissions during aggressive and microtransient driving, as described in § 86.159–00 over the US06 cycle, and also the test procedure designed to measure urban driving emissions while the vehicle's air conditioning system is operating, as described in § 86.160–00 over the SC03 cycle.

US06 means the test cycle, described in § 86.159–00 and listed in appendix I, paragraph (g), of this part, which is designed to evaluate emissions during aggressive and microtransient driving.

[61 FR 54878, Oct. 22, 1996]

§ 86.000–3 Abbreviations.

The abbreviations in § 86.098–3 continue to apply to 1998 and later model year vehicles. The abbreviations in this section apply beginning with the 2000 model year:

A/C—Air conditioning
FTP—Federal Test Procedure
SFTP—Supplemental Federal Test Procedure
WOT—Wide Open Throttle
[61 FR 54878, Oct. 22, 1996]

§ 86.000–7 Maintenance of records; submittal of information; right of entry.

Section 86.000–7 includes text that specifies requirements that differ from § 86.091–7, § 86.094–7 or § 86.096–7. Where a